



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,609	07/28/2003	In-De Ou	OUIIN3001/EM	4280
23364	7590	09/12/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			DANG, PHUC T	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,609

Applicant(s)

OU ET AL.

Examiner

PHUC T DANG

Art Unit

2818

pu

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 8/25/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-16, 18-20, 22, 23 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 21 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2818

DETAILED ACTION

Response to Arguments

1. Applicant's response to argument filed on August 25, 2005 with claim 13-16 and 18-28 has been acknowledged and considered.

The indicated allowability of claims 13-16 and 18-28 are withdrawn in view of the newly discovered reference(s) to Ishikawa et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 13-16, 18-20, 22-23 and 25 are rejected under 35 U.S.C. 102 (e) as being anticipated by Ishikawa et al. (U.S. Patent No. 6,600,214 B2).

Regarding claim 13, Ishikawa et al. disclose a method of manufacturing an electronic component device comprising:

Art Unit: 2818

providing a board (20);
forming a via (24) in the board (20);
forming a metal layer (25) on an inner wall of the via (24);
cutting the via (26a) to form a cutting street (29) to separate the metal layer into a plurality of separated metal layers (Figs. 1 F and 2F), and

filling an insulator (col. 4, lines 26-27) in the via (26a) and the cutting street (29) [Figs. 1A-1F and 2A-2F and col. 3, line 65-col. 5, line 28).

Regarding claim 14, Ishikawa et al. disclose a step of forming a via land (28b) on the board (20) and at the periphery of the via (26a).

Regarding claim 15, Ishikawa et al. disclose a step of cutting the via further separates the via land into a plurality of separated via lands [Figs. 1F-1H].

Regarding claim 16, Ishikawa et al. disclose the via is a through hole [24, Fig. 1B].

Regarding claim 18, Ishikawa et al. disclose the via is a blind via [26a, Fig. 1F]

Regarding claim 19, Ishikawa et al. disclose wherein the material of the metal layer is copper [col. 4, line 21].

Regarding claim 20, Ishikawa et al. disclose wherein the material of the insulator layer is epoxy [col. 10, lines 25-30].

Regarding claim 22, Ishikawa et al. disclose wherein the board comprises a plurality of insulating layers (21) and conductive trace layers, (28a) and the insulating layers (21) are interlaced with the conductive trace layers (28a).

Art Unit: 2818

Regarding claim 23, Ishikawa et al. disclose wherein forming the metal layer on the inner wall of the via comprises forming an activated film on the inner wall of the via by electro-less plating; and forming a metal film on the activated film by plating [col. 4, lines 8-24].

Regarding claim 25, Ishikawa et al. disclose wherein cutting the via comprises mechanical drilling [col. 9, lines 16-29].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al.

Regarding claims 26-28, Ishikawa et al. do not disclose a step of cutting the via comprises laser ablation and photochemical reaction and plasma etching.

However, it is well known in the art was to perform a cutting the via comprises laser ablation and photochemical reaction and plasma etching as cited in claims 26-28 by Ishikawa for a purpose of improving the process.

Allowable Subject Matter

4. The following is a statement of reason for the indication of allowable subject matter:

Art Unit: 2818

Claims 21 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art of records discloses the material of the insulator layer is ink as cited in claim 21 and the activated film comprises polymer film as cited in claim 24.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is 571-272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and Final communications.

7. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang

PD



Examiner

Art Unit 2818